Title (en)

Combinatorial DNA library for producing modified N-glycans in lower eukaryotes

Title (de)

Kombinatorische DNA-Bibliothek zur Herstellung modifizierter N-Glukane in niederen Eukaryoten

Title (fr)

Banques ADN combinatoires destinées à produire des N-glycanes modifiés dans des eucaryotes inférieurs

Publication

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Application

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Priority

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- US 37187703 A 20030220

Abstract (en)

[origin: EP2316963A1] The present invention relates to eukaryotic host cells having modified oligosaccharides which may be modified further by heterologous expression of a set of glycosyltransferases, sugar transporters and mannosidases to become host-strains for the production of mammalian, e.g., human therapeutic glycoproteins. The invention provides nucleic acid molecules and combinatorial libraries which can be used to successfully target and express mammalian enzymatic activities such as those involved in glycosylation to intracellular compartments in a eukaryotic host cell. The process provides an engineered host cell which can be used to express and target any desirable gene(s) involved in glycosylation. Host cells with modified oligosaccharides are created or selected. N-glycans made in the engineered host cells have a Man5GlcNAc2 core structure which may then be modified further by heterologous expression of one or more enzymes, e.g., glycosyltransferases, sugar transporters and mannosidases, to yield human-like glycoproteins. For the production of therapeutic proteins, this method may be adapted to engineer cell lines in which any desired glycosylation structure may be obtained.

IPC 8 full level

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